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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,903	02/20/2002	Takahide Itoh	219918US3PCT	2367

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EXAMINER

TRIEU, THERESA

ART UNIT	PAPER NUMBER
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3748

DATE MAILED: 11/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/049,903

Applicant(s)

ITOH ET AL.

Examiner

Theresa Trieu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,5,6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "main bearing 30" (see page 12, line 30). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:
- On page 5, line 31, "rotating shaft 16" should be changed to --rotating shaft 9--.
 - On page 6, line 19, "end plate 3a" should be changed to --end plate 12a--.
 - On page 6, line 25, "seal member 15" should be changed to --seal member 18--.
 - On page 12, line 25, "sealed housing 2" should be changed to --sealed housing 21--.
 - On page 13, line 13, "rotating shaft 16" should be changed to --rotating shaft 9--.
 - On page 14, line 12, "Fig. 1" should be changed to --Fig. 10--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morishima (Publication No. JP 06-0264710) in view of Yajima et al. (Publication No. JP 04-311693).

Re claims 1-3, as shown in Fig. 1, Morishima discloses a scroll compressor comprising:

a fixed scroll (12) having a spiral wall standing on one side face of an end plate, and secured in place; and an orbiting scroll (11) having a spiral wall standing on one side face of an end plate, and supported so as to be orbitally movable while being prevented from rotating, with the two walls engaged with each other,

wherein a back pressure chamber (14) is provided on the other side face of the end plate of at least one of the fixed scroll (12) and the orbiting scroll (11), and the one scroll is pressed against the other scroll by introducing fluid which is compressed by the fixed scroll and the orbiting scroll into the back pressure chamber; an elastic body (not numbered; however, clearly seen in Fig. 1) for pressing at least one the fixed scroll and the orbiting scroll against the

other scroll. However, Morishima fails to disclose a step portion being provided on the one side face of the end plate of at least one of the fixed scroll and the orbiting scroll.

As shown in Figs. 1 and 2, Yajima et al. teach that it is conventional in the compressor art to utilize a stepped shape provided on the one side face of the end plate of at least one of the fixed scroll (19) and the orbiting scroll (21), which has a high part with a height thereof which is high on a central side in a spiral direction, and a low part with a height thereof which is low at an outer peripheral end side; and an upper rim of the wall of the other of the fixed scroll and the orbiting scroll is divided into a plurality of parts to form a stepped shape having, corresponding to the parts, a low upper rim where the height of the part is low at a central side in the spiral direction, and a high upper rim where the height of the part is high at an outer peripheral end side.

Re claims 4 and 5, Yajima et al. further disclose the back pressure chamber (not numbered; however, clearly seen in Fig. 1) is provided on the other side face of the orbiting scroll (21); a bearing member (not numbered; however, clearly seen in Fig. 1) which performs orbit movement while engaging the other side face of the end plate of the orbiting scroll (21), the back pressure chamber is provided between the orbiting scroll and the bearing member.

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the step portion being provided on the one side face of the

end plate as taught by Yajima et al., to improve the compression capacity and the rigidity of the spiral element, in Morishima device.

Prior Art

The IDS (PTO-1449) filed on March 7, 2002, April 9, 2002 and August 30, 2002 has been considered. An initialized copy is attached hereto.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of two patents.

Terauchi (Patent No. 4,477,238) discloses a scroll type compressor with wrap portions of different axial heights.

Hirano et al. (Patent Number 5,435,707) disclose a scroll type compressor with an elastically deformable top plate or end plate.

Ukai et al. (Publication Number JP 05-157063) discloses a scroll type fluid machine.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theresa Trieu whose telephone number is 703-308-6434. The examiner can normally be reached on Monday-Thursday 7:30am- 6:00pm - Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E Denion can be reached on 703-308-2623. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-872-9302 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.

TT

November 14, 2002



Theresa Trieu

Patent Examiner

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THOMAS DENION
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700